



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,946	08/20/2003	Shuichi Kanno	ASA-1145	5406

24956 7590 08/23/2006

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.  
1800 DIAGONAL ROAD  
SUITE 370  
ALEXANDRIA, VA 22314

EXAMINER

DUONG, THANH P

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/643,946

**Applicant(s)**

KANNO ET AL.

**Examiner**

Tom P. Duong

**Art Unit**

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/20/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group III (claims 6-7) in the reply filed on July 27, 2006 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 6 and 7 are rejected under 35 U.S.C. 102(a,e) as being anticipated by Shamouilian et al. (6,468,490). Shamouilian '490 discloses an apparatus (Fig. 2) for treating a perfluorocompound (Abstract) comprising obtaining a gas flow by diluting a perfluorocompound with nitrogen or air (Col. 7, lines 1-12); a means adding steam (Col. 7, lines 1-12) to said gas flow; a reactor (250) for bringing said gas flow containing added steam into contact with a catalyst (257) decompose the perfluorocompound;

heating means (240) heating said catalyst comprising Ni, Al, and W as catalytically active ingredients (Col. 6, lines 35-44) and comprising a mixed oxide or complex oxide of Ni and Al and a mixed oxide or complex oxide Ni and W which has been packed said reactor, to the decomposition temperature the perfluorocompound; and an exhaust gas washing tank (260) for bringing a gas containing decomposition products produced in said reactor into contact with water an alkali to remove hydrogen fluoride from the gas (Col. 7, lines 47-67); wherein the apparatus is in succession of the etching apparatus (Col. 5, lines 38-49).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0885648 (hereinafter EP '648) in view of Shamouilian et al. (6,468,490). EP '648 discloses an apparatus (Fig. 1) for treating a perfluorocompound (page, lines 1-34) comprising obtaining a gas flow by diluting a perfluorocompound with nitrogen or air (2, 3); a means adding steam (4) to said gas flow; a reactor (8) for bringing said gas flow containing added steam into contact with a catalyst (9) decompose the

perfluorocompound; heating means (10) heating said catalyst comprising Al and W as catalytically active ingredients and comprising a mixed oxide or complex oxide and Al and a mixed oxide or complex oxide Ni which has been packed said reactor, to the decomposition temperature the perfluorocompound; and an exhaust gas washing tank (11) for bringing a gas containing decomposition products produced in said reactor into contact with water an alkali to remove hydrogen fluoride from the gas (Figure 9); wherein the apparatus is in succession of the etching apparatus (Figure 1). EP '648 discloses the complex oxide of Ni and Al (page 3, lines 1-20) but is silent with respect to the oxide of W. Shamouilian teaches the catalytic reactor 250 is provided with a catalyst surface 257 with metal oxide including metal oxide mixture of W to enhance the catalytic activity for treating PFC effluent (Col. 6, lines 24-44). Thus, it would have been obvious in view of Shamouilian to one having ordinary skill in the art to substitute the metal oxide composition of Shamouilian in the modified device of EP '648 to enhance the catalytic activity since it is art-recognized to substitute known equivalents for the same purpose. See *In re Ruff*, 256 F.2d 590, 118, USPQ 340 (CCPA 1958).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong  
August 17, 2006

TD



Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700